APPENDIX D

Educational Programming at Washington Park Arboretum

Part 1 The Justification for K-12 Education Programming in Washington Park Arboretum

Part 2 Current Education Programs at the Washington Park Arboretum

Part 3 Education and Outreach at the Washington Park Arboretum, Current and Future Status

THE JUSTIFICATION FOR K-12 EDUCATION IN WASHINGTON PARK ARBORRETUM

Thomas Hinckley

Five principal issues have been raised regarding the role of the Washington Park Arboretum and its managers, the City of Seattle's Department of Parks and Recreation and the University of Washington, in K-12 education. These are:

(1) the suitability of the Washington Park Arboretum as a location for K-12 education (i.e., why go outside of the classroom?).
(2) the appropriateness and suitability of the WPA as a location for K-12 education within the context of the other facilities available to the Department of Parks and Recreation and to the University of Washington (why the Washington Park Arboretum?).
(3) the apparent incompatibility of the University of Washington, an institution of higher education, and its participation in K-12 education (why is the University of Washington involved in K-12?).
(4) the appropriateness of having such young children come to the WPA (why learn science so young?).
(5) the rationale for using any location other than MOHI for K-12 education (what's wrong with MOHI?).

Background

Although the United States is currently enjoying its most prosperous period ever and much of this prosperity is a direct result of science driven technology and an ample supply of skilled workers and professional people, school-aged children are increasingly less well prepared and interested in math, science, and engineering compared with other developed countries. Both in the work force and in undergraduate and graduate programs, citizens of countries other than the United States are increasingly being accepted or recruited to fill this skill gap. As the pool of poorly prepared and unmotivated K-12 students increase, this gap will widen and may reach proportions where advances and business growth may be delayed. The Washington Park Arboretum can provide educational opportunities in the sciences and can provide the context in which both individual and family learning can occur.

While understanding science is increasingly important in our technology-based world, Americans have largely left to chance the development of such understanding by their children. Yet knowledge of science and technology and their methodologies will be necessary for all students if they are to enjoy longer, healthier and more vital lives, and to give and get more from their careers in the ever-changing workplace of the future. Students are enormously empowered when they understand science as a key part of the natural world and realize that science gives them powerful insights into how this world functions.

(1) Why go outside of the classroom?

Recognition of the above problem has led to two important outcomes. First, as teachers sought ways of increasing student participation and interest in the sciences, using the "environment" of the student was found to be a powerful tool (Parker and Wodzinski 2000). Students were more motivated, learned better and demonstrated improved ability to place their various subjects into a broader, more integrated context. It was also discovered that, rather than telling them about what they were sensing, although initially slower it was far more effective to let them explore, observe, make generalizations, ask the why and how, etc. Inquiry-based or experiential learning were the terms used to describe this educational pedagogy (Flick 1993). Students not only experience the thrill of learning about science by doing science, but also acquire valuable problem-solving skills and an understanding of science relevant to the everyday world. (It is interesting to note that affluent, urban/suburban children have lost many of the problem solving skills children growing up on farms and ranches learn naturally.) As just a small example, this approach is now being used by teachers at the Audubon day camp, by the biology teachers at Garfield High School and by faculty in the Division of Ecosystem Sciences at the University of Washington. Three summers ago, the Ecological Society of America held a special workshop for its members on this approach.

Second, a set of standards regarding education and science education have been developed. These standards were published by the National Research Council in 1996 and correspond directly to the Seattle Public School District's K-12 Science Essential Academic Learning Requirements (EALRs). Seattle Public Schools has interpreted the EALRs to make their own district standards – essentially spelling out what should be done each year. In the spring of 1996, a partnership, funded by the National Science Foundation, was established between Seattle Public Schools, the University of Washington, the Fred Hutchinson Cancer Research Center and the Boeing Company. This partnership was designed to "ensure that all Seattle elementary school children will have the opportunity to experience science teaching that is both engaging and substantive." Adopting these standards has led to a two-pronged approach. First, curricular units or modules about a wide range of subjects were developed and assigned to a grade level. For example, in the third grade, students in the Life Sciences will learn about Plant Growth and Development. For this module, the in-class, out-class and integrative opportunities will be listed. Materials and kits to help the teachers were developed and the teachers were trained to use the kits. The Washington Park Arboretum current serves a pivotal role in the outdoor component of the Plant Growth and Development module. Staff at the Washington Park Arboretum, working with public school teachers in both Seattle and the region, have identified other curricular units for which the Washington Park Arboretum may serve a critical educational role.

(2) Why the Washington Park Arboretum?

The Washington Park Arboretum is outdoor museum: the collections, the gardens, the matrix of native plants and features such as the wetlands near Foster Island are all part of this museum. The educational staff at the WPA have already developed educational modules that meet the EALRs and provide a critical part of the module on Plant Growth and Development for third grade students in Seattle and the region. In addition, the

education staff have developed materials for teachers, teachers and their students and families—education is a continuum from the home to the school and all elements must be equal partners. The Washington Park Arboretum is unique in that it can leverage both the expertise of the city and the university – specifically, the university can offer support in the "science" portion of the curriculum, the support piece that is so often missing.

(3) Why is the University of Washington Involved?

In an August 29, 1999 Opinion in the Seattle Times, President Richard L. McCormick made a University commitment to K-12 education. This commitment was made because of widespread pressure (perception) from the public that higher education will help with K-12 reform, that tomorrow's University students are today's K-12 students, the University has a stake in enriching the resources and raising the level of achievement in public schools, and that citizens must have access to higher education to share in the opportunities and wealth of the 21st century. It is no longer adequate to have just a high school education. It is clearly in the self-interest of the University of Washington to be directly involved with K-12 education – improved learning, motivation and skills in K-12 students only means less remedial work and a better student pool for the University. One of the goals of the University, approved by the Board of Regents, is for faculty, staff and students, the institution, to participate in K-12 activities. The University of Washington is not using the WPA to expand its facilities for higher education and research, it is using the WPA, a resource formally tied to the University since 1934, to increase the seamless nature of education in the State of Washington.

(4) Why learn science so young?

Because the skills in science build gradually, just as do those of language and mathematics, the primary school years are ideal for the introduction of science. Young children are naturally curious about the world around them and the daily classroom structure allows large blocks of time to explore issues in depth and to integrate science with mathematics, writing, art, social studies and literature.

Moreover, educators and scientists agree on the most effective approach, finding that there are enormous benefits for K-5 students participating in inquiry-based, hands-on science programs. Skills developed from such an approach are critical, for example, in helping young people understand and appreciate similarities and differences, the nature of renewable and non-renewable resources and the pressures that rapid population growth places on these resources. By working together in groups on science activities, children also learn to cooperate with others and gain important team-building skills.

Although science education is inadequate for most students, females and minorities are especially underrepresented in high school and college courses, and in scientific and technical professions. This trend begins at an early age. Educators believe that this can be reversed, especially by teaching science in an engaging fashion at the elementary school level, allowing students left behind in traditional teaching methods to become excited about science. Essentially, student decisions about continuing the study of science are made in middle school. If students do not have positive/appropriate experience prior to that decision making time, they are likely to opt out of science (this argument is particularly true for girls) – just another argument for starting science learning early and having it fully integrated into the curriculum much like math and English.

(5) What's wrong with Museum of History and Industry (MOHI)

There is nothing wrong with MOHI as a location for educational outreach. MOHI may indeed be the ideal location for leading marsh walks or having films or speakers in an auditorium. However, MOHI is not suitable for many other educational opportunities. To expect a third grader with his or her teacher to walk more than 200 to 300 meters for an education program is at best unrealistic and at worst, a waste of time. The linear design of the WPA precludes easy access to all parts. The most effective and dispersed development of educational opportunities would involve three locations, MOHI, a location near or at the current Graham's Visitor Center and a location near the south end of the WPA. If we expect our children to become environmental stewards, repeated exposure to hands-on learning at locations such as the WPA is essential. A day at Schmidt's Park or a week at Camp Parson's on Hood Canal is not sufficient to develop either the inquiry skills or the appreciation of how humans are stewards of natural and human impacted systems.

References

Flick, L.B. 1993. The meaning of hands-on science. Journal of Science Teacher Education 4:1-8.

Parker, S. and T.R. Wodzinski. 2000. Cultivating educational partnerships allows learning to blossom. Public Garden 15(1):13-17.

Current Educational Programs at Washington Park Arboretum

Arboretum staff provided the following information regarding current educational offerings at the Washington Park Arboretum for inclusion in the EIS. Current offerings include programs for adults, professionals, schools, families, volunteers, educators, youth groups, and casual visitors, and are listed in Table D1. The University of Washington provides staff leadership and resources for most of these programs, which are administered by the Center for Urban Horticulture under the direction of the College of Forest Resources.

The University of Washington has, as part of its expanding K-12 educational program, fostered a substantial increase in school-age programs at Washington Park Arboretum during the last 5 years. Additionally, the Arboretum staff is leading program development for plant science-based inquiry programs in cooperation with the Seattle Public Schools, the University of Washington, and six other local schools. South Seattle Community College, Edmonds Community College, and other schools bring students onsite for non-guided programs. Washington Park Arboretum has limited facilities for classes, workshops, plant propagation, and research. Many of the educational programs occur at the University of Washington Center for Urban Horticulture.

Educational Programs for Adults

The Washington Park Arboretum adult education program has been coordinated by a full-time employee based at the Center for Urban Horticulture with approximately 25 percent time commitment to Arboretum- based programs. The number of adult programs is expected to increase in 2000, with a goal of engaging at least one full-time adult leadership staff person.

The Seattle Department of Parks and Recreation has also begun expanding environmental initiatives. Currently environmental programs are being offered at Discovery Park, Camp Long Environmental Education Center, Carkeek Park Educational Center and Seward Park. The Department and the Arboretum will develop joint programs at the Arboretum to reach and serve individuals that are not currently using the Arboretum to its fullest educational benefit.

Guided Tours

Tours led by trained arboretum guides are available to adult groups year-round. Topics available include seasonal tours, native plants and ethnobotany, and Foster Island ecology. Tours are generally 60 to 90 minutes in length. A total of 416 adults took guided tours from July 1997 to June 1998, and 366 adults took guided tours during the same time period in 1998–1999. Participation in guided tours is expected to increase with the addition of audio tape tour aids.

Weekend Walks

Free public tours are offered every Saturday and Sunday at 1 p.m. except during December and on holidays. The tours are 1 to 2 hours in length and focus on a variety of subjects depending on the season, the guide, and the group's interest. Approximately 425 people participate in these walks each year.

Table D1. Graham Visitors Center usage by groups during fiscal 1998–1999.

	July '98	Aug	Sept	Oct	Nov	Dec	Jan '99	Feb	Mar	April	May	June	Totals
Meetings (number of uses)													
Arboretum Foundation groups	14	16	9	21	11	10	11	19	17	16	12	6	162
University of Washington groups	8	7	13	0	0	1	4	0	1	2	0	2	38
Seattle Parks Department	2	1	2	1	2	2	1	1	1	0	0	0	13
Other groups	1	6	10	6	8	4	12	5	7	8	13	24	104
Total number of people: 4,000													
Social Events (number of attendees)													
Weddings and receptions	650	750	500	125	0	80	0	0	0	0	50	75	2230
Other events	450	400	400	80	250	375	0	70	50	200	250	300	2825
Total number of events: 55													
Special Events													
Arboretum events				Bulb sale 4½ days		Greens Galore one week			Book sale four days			Annual meeting	
Non-arboretum events												Bamboo Society show	
Graham Visitors Center (number of visitors counted) – Fiscal 1998–1999													
Visitors	2,900	3,000	3,000	2,600	1,600	900	900	1,100	700	3,800	3,700	2,900	27,100

Courses

The University of Washington conducts approximately 45 extension courses related to horticulture each year for the general public. These courses vary in length and cost depending on the topic. The courses typically include both lectures and demonstrations, and when possible, hands-on experience. One half of the courses are conducted entirely or partially in the arboretum; the rest take place at the Center for Urban Horticulture campus at Union Bay or other locations.

Lectures

In recent years, the Washington Park Arboretum has sponsored five different lecture series programs: Plants and Gardens of the World, Plant Enthusiast, Brown Bag Talks, Practical Northwest Gardening Guide, and Noontime Talks. Topics vary by category, season, and cost. About 200 participants attend these lectures annually.

Plant Propagation Workshops

Monthly plant propagation workshops are held in the arboretum greenhouse or the Center for Urban Horticulture. Each workshop is independent and focuses on a different skill. Participation averages about 100 people a year.

Plant Study Program

Study sessions meet two Saturdays each month to explore a group of plants important for taxonomic or horticultural value. The sessions study over 300 plants throughout the year, drawn entirely from the arboretum collections. Each session averages about 12 participants.

Construction Demonstrations

Monthly demonstrations of basic garden building construction projects for homeowners (e.g., fences, rock walls, and walkways) take place at the Washington Park Arboretum, the Center for Urban Horticulture campus at Union Bay, or other locations depending on the topic. There are about 25 participants at each demonstration.

Symposia

The University of Washington coordinates two- to four-day-long symposia each year. These are in-depth programs featuring multiple lecturers from around the world. The programs appeal to professionals and avid amateurs. One symposium each year takes place in the Washington Park Arboretum, with about 100 participants. The others occur in the Center for Urban Horticulture campus at Union Bay and attract about 500 participants.

Educational Programs for Professionals

Seminars

The seminar programs respond to industry needs for supplemental training, and also often meet industry requirements for continuing education accreditation and licensing. Seminar subjects range from landscape management to urban forestry and ecological topics. Programs combining lectures with demonstrations and fieldwork are taught by University of Washington faculty and staff or industry experts. Approximately six programs per year staffed by University of Washington personnel take place in the Washington Park Arboretum. The rest take place at the Center for Urban Horticulture campus at Union Bay or other locations. Presently there are about 125 participants annually in these programs.

Degree Programs through the College of Forest Resources

The University of Washington offers a wide range of courses in urban horticulture, ecology, and urban forestry through the College of Forest Resources. University programs include course work that uses the Washington Park Arboretum collections, meeting rooms, and facilities and the Center for Urban Horticulture campus at Union Bay. About 25 student projects including research studies are conducted at the arboretum every year.

Youth and Community Outreach Educational Programs

One full-time staff member and two half-time employees presently administer the Washington Park Arboretum youth and community outreach programs. Currently, staffing needs are expected to remain at this level.

School Programs

Saplings School Tours—Tours are offered Monday through Friday year-round beginning at 10 a.m. The cost is $2 per student, and scholarships are available. All programs are curriculum-based, and docents complete a training program on each topic. Available tour topics include the following:

- Grades K–2: Discover Plants
- Grades 3–6: The Life Cycle of a Plant: Fantastic Fall (October and November)
- Grades 3–6: The Life Cycle of a Plant: Spring Sprouts (April and May)
- Grades 3–8: Plants and People of the Northwest
- Grades K–8: Wetland Ecology Walk.

These science-based student programs drew 3,944 participant visits during the 1997–1998 school year and 3,416 visits in 1998–1999. Currently, student participation is expected to reach 5,000 visits per year from Seattle schools and 2,000 to 3,000 from area schools. The majority of this program will run each spring.

A National Science Foundation grant through the University of Washington and six area schools is presently being used to develop a science program for middle schools. This program is currently expected to attract 5,000 to 8,000 visits by children each fall.

Arboretum Explorer Packs—This program is designed for self-guided exploration of the arboretum, using rental kits containing information and equipment. Marsh Madness and Tree-Tective packs are equipped with field guides, magnifying lenses, and activity ideas to inform students about the habitats, plants, animals, and insects found in the arboretum. There is a 2-hour rental fee of $15 for a group of 30 or fewer. During the 1997–1998 school year, 628 students participated, and 749 students participated in 1998–1999.

Youth and Family Programs

Family Explorer Packs—Also designed for self-guided exploration of the arboretum, Wetland Wonders and Family Tree Packs are available for $5 for a 2-hour rental (free to Arboretum Foundation members). These rental kits are available on a first-come first-served basis at the Graham Visitors Center. One to two new types of pack are anticipated to be developed each year.

Arboretum Adventures—Programs provide children ages 6–12 an opportunity to explore the natural world around them through interactive tours and hands-on art and science activities. Programs are free and occur one Sunday each month. Presently about 25 to 50 people participate in each session. Participation is currently expected to increase to 100 to 200 people per session.

Storyvine—A nature-oriented storytelling program is offered one Saturday morning each month at no charge. About 75 people participate at each session.

Summer Nature Day Camps (expected to begin in summer 2000)—Six week-long day camp sessions for entering second through fifth graders are scheduled for July and August. Session topics include "stories to grow on," "curious critters," and "flora fun." Activities planned include games, scientific experiments, and nature walks. Sessions are limited to 25 students and are scheduled Monday through Friday from 9:30 a.m. to 3:30 p.m., at a cost of $125 per student.

Outreach

Branching Out Program—This onsite after-school program for under-served Seattle youth is offered at no charge. The 10-week program partners with local community centers and involves approximately 50 students. The weekly interdisciplinary program encourages youth to develop an understanding and respect for themselves and the environment.

Interpretive Materials

Interpretive brochures, a trail map, a waterfront trail guide, and a native plant guide are available at the Graham Visitors Center. Visitors can also find interpretive information in the Graham

Visitors Center lobby and on the grounds (including a main kiosk and five trail maps). Additional interpretive materials will be defined in a future study.

Self-Guided Learning Opportunities

The education staff encourages teachers to use the Washington Park Arboretum as an outdoor classroom. University of Washington staff and Arboretum Foundation volunteers have created informational brochures, maps, and other resources to assist self-guided tours. Presently there are maps for three different tours, and 21 additional tours currently are anticipated to be developed during the next 2 to 3 years.

EDUCATION AND OUTREACH IN THE WASHINGTON PARK ARBORETUM, CURRENT AND FUTURE STATUS

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9/1/00

The Washington Park Arboretum is immediately poised to become a viable participant in the realm of environmental and horticultural education to a diversified audience during the next few years, providing acceptable staffing, facility, and funding levels are achieved. The Arboretum can strategically work closely with the University of Washington in both its adult and K-12 programs and as a partner with the Department of Parks and Recreation's enviroronmental education programs as well as local schools, community centers, and other community programs. We also would like to partner with other horticultural and environmental educational organizations in the community.

The goals and objectives include:

Create and sustain high quality school programs that fit the learning needs of teachers and the state requirements.

Aid in professional development of teachers who use our programs (teacher workshops including credit), and to serve as an educational resource partner with K-12 and educational outreach.

Offer before and after school/weekend/summer outreach opportunities for the local community, with the Carlson Center, Center on the Environment, Seattle Dept. of Parks and Recreation community centers and environmental education centers, UW student interns, and other youth organizations *(TREC, ASAP, YMCA, Sea. Earth Service Corp, TreeMendous Seattle).

As part of the summer outreach opportunities, develop a junior naturalist program for weekend visibility and summer activities.

Provide high school career opportunities (high school internships) by partnering with our grounds and curatorial staff in order to gain community service activities in leading weekend tours and help with summer activities. This gives opportunities for youth to gain interpretive skills and work experience. This would encompass all aspects of managing a Museum and could open options for career exploration and offer participants hands-on experience in the work environment.

Bring an artistic and cultural element to programming; perhaps through international programming on family weekend activities, through "Arboretum Adventures" and " Storyvine", and with ethnic cultural groups such as a Native American Artists, Japanese Artists, etc.

Develop programs for adults in all phases of horticulture, environmental, and ecology. This would include classes, tours, seminars, on-site studies and field trips.

Coordinate membership educational activities with the Arboretum Foundation and any other support organizations

Provide a community space where members of the community at large may visit, use, and enjoy for the respite and relaxation the Arboretum provides. Well-designed facilities may also function as community meeting and social spaces.

Coordinate appropriate educational and community outreach activities with other educational organizations such as community colleges, other universities, high schools and local community centers.

Provide for summer day camps and other programs in cooperation with institutions such as UW Education Outreach and adjunct facilities for programs conducted at Camp Long, Woodland Park Zoo, Discovery Park, etc.

* TREC = Teens for Recreation & Environmental Conservation, ASAP = After School Activities Program

CURRENT AND POSSIBLE PROJECTED PARTICIPANTS

Program	1999-2000	2001	2006	2011
Saplings (~3rd)	2,640	3,500	6,000	10,000
(see attachment on projected student numbers)				
Middle School Programs	100	600	900	2,500
Self-guided groups	550	600	800	1,000
Self-guided explorer packs	1,008	1,250	2,000	2,500
Adult Tours	245	300	1,500	3,000
Adult Classes (on-site)	600	1,100	2,500	5,000
Weekend Walks	255	300	1,000	1,500
Weekend Family Programs	155	250	1,000	3,000
After School Programs (middle school)	30	50	250	500
Teacher Workshops	0	25	50	75
Summer Projects (high school)	0	25	50	100
Summer Day Camp (3-6th)	450	900	1,900	2,500
Higher Education Class Use – UW	500	600	1,500	2,500
Higher Education (other)	900	1,000	1,200	1,500
Membership activities (AF)	3,400	4,000	6,000	10,000
Community Use of Facilities	10,500	11,000	11,000	13,000
Visitors Through Graham Visitors Center	27,100	28,000	30,000	35,000

BRIEF DESCRIPTION OF PROGRAM AREAS

Saplings. Basically, Saplings offers school programs for the K-8th grade level with a focus on 3rd graders. The Sapling's Spring Sprouts Program is now aligned with the Seattle School District's EALR's on Plant Growth and Development. By partnering with other museums such as MOHAI and Burke Museum, we can increase our program offerings in such topics as Native Plants and Wetland Ecology. Staffing will increase through naturalists and volunteers. Currently 60% of our participants are Seattle School children. In Spring 2000, 1762 students participated, with the 3rd graders (837) being the largest group. Over 400 were brought through efforts of Alliance for Education and the Seattle School District. We fully expect larger increases from the other 8 school districts we serve through Saplings.

Middle School Programs. The current staff is working with the University of Washington, Burke Museum and 10 middle schools for the new 6-8th grade Native Plants and People program. With additional naturalists, we can open Saplings Programs from 12:30 pm – 2:00 pm, which will enable us to offer more optons for school programming. This would require additional naturalists and volunteers.

Self –Guided Groups and Packs. Our Explorer Packs have become extremely popular, and the demand far exceeds our supply. We are working on adding an additional seasonal fall-spring topic for 2 more Explorer Packs, anticipated Spring 2001. By working with other institutions we can expand our educational materials on site and offer families, and groups (such as summer day camp programs) an opportunity to come to the Arboretum, secure materials, and conduct their own self-guided activities.

Adult Tours and Classes. Currently the Arboretum is used as a site for adult classes often taught at CUH. There is a need for facilities on this site to offer additional classes more closely related to the Arboretum. Also there is a market for adult tours, perhaps even on a fleet of electrical carts. This will require additional staff coordination and training of volunteers.

Weekend Walks. These public walks have become very popular and offer the weekend visitors (both natives and tourists) an opportunity to enjoy and learn about the Arboretum. There is need for additional staff time in recruiting, scheduling and training volunteers.

Weekend Family Programs. While still small in number, there seems to be a demand for specialized family programs such as Storyvine and Arboretum Adventures. These family programs are conducted by outside contractors, but do need staff scheduling, oversight, and PR. These programs are offered free of charge to the community.

Branching Out, An After School Program for middle school children. These programs would provide environmental education coupled with community service projects. Partners would include: TREC, ASAP, local community centers, UW student, and our grounds and curatorial staff.

S**ummer Day Camp.** There is already demand for this type of program, which is currently being offered by the Seattle Dept. of Parks and Recreation. The Arboretum already gets many calls during the summer requesting Arboretum camp activities. The Science Adventures Program held in the old greenhouse in 1997-99 was a success. This summer we will partner with UW Outreach for summer camp at the Arboretum for 4-6 weeks We could begin a full summer in 2002, with further expansion possible into 3-6th graders. This will enable us to ease into the camp market and develop a reputation for weekday summer activities by expanding our partnership with Seattle Dept. of Parks and Recreation, in order to benefit form their experience.

Teacher Workshops. The current spring workshop is an ideal start for teacher training workshops. This can be partnered with University of Washington outreach and other institutions, and can be set up to offer credit and professional development for teachers, and assist with the training of staff in the Dept. of Parks and Recreation. This would require staff leadership.

Summer Projects. The Arboretum has a history of providing high school students a place for community, scouting and other special projects. By partnering with local schools and Earth Service Corp. for summer community service projects, we can offer training, experience, credit, and pay to career oriented students. This would require additional staff both in education and in the grounds/curation staff.

Higher Education Class Use – UW. Approximately 20 different UW classes now use the Arboretum grounds as on-site teaching laboratory. This currently brings in at least 500 students. With increased interest in environment and ecology, we would expect this to grow. While indoor facilities are not really necessary, additional amenities are, as well as a possible place to retreat on rainy days.

Higher Education (other). At least 5 community colleges, technical schools, landscape and professional groups, and a number of high biology programs use the Arboretum as their outdoor lab. This would also includes Seattle University and Seattle Pacific University. They have similar requirements to above.

Membership Activities (AF). Our major support organization, the Arboretum Foundation, holds a number of classes, study courses, and membership activities. We would expect these activities to increase. Our UW staff would need to be supportive for these, thus increasing staff demand and use of volunteers.

Community Use of Facilities. The Graham Visitors Center has become a highly popular place for community meetings and social events. Its meeting space is currently maxed out, and many groups are turned away. We needed additional heated space. Family programs suffer in winter from the lack of appropriate heated facilities. Currently programs are run in the old greenhouse.

Visitors Through GVC. The Graham Visitors Center is the only place where visitors can obtain information and help about the Arboretum. We would expect the number of visitors to grow as the community itself grows. Additional staff will be necessary to assist with this, especially on weekends.

Projected Staffing and Volunteer Needs

Program	Current	2001 ADD:	2006 ADD:	2011 ADD:
Saplings Programs	1 PT naturalist &	*1 FT naturalist &	1 FT naturalist	
Middle School	~20 volunteers	1 PT naturalist	2 PT naturalists	
Self-guided Tours				
Self- guided Packs		*1 FT naturalist (same person)		
Adult Tours	½ staff for training & 10 volunteers			
Adult Walks	10 volunteers			
Weekend Walks @ 1 pm	10 volunteers			
Weekend Family Activities	contracted specialists			
Middle School – after school	*1 PT naturalist (for MS & HS projects)	1 PT naturalist		
Summer Camps	.	4 counselors	additional counselors	
Teacher Workshops (summer)				
High School – summer projects	*1 PT naturalist (same person)			
Higher Education – UW				
Higher Education – Other				
Membership Activities				
Community Use of Facilities		1 PT scheduling, maintainence, increasing to 2		
Visitors Through GVC**		1 PT weekend		

Each new paid staff member may begin as a part or half-time position. It is anticipated that eventually there could be a director of education and several assistants. Each could have areas of responsibility such as Saplings, Middle Schools, Adults , Interpretation, Family and Weekend. It is anticipated that additional people will be hired on part-time or contract basis as the program grows.

** If we had a FT naturalist for Saplings, that person could also assist with Explorer and Family Packs, and Middle School Junior Naturalists programs in the summer.

In order to expand our Saplings time to 12:30 – 2:00 pm, we would need at least 2 naturalists for 30 students. Ideally, 1 FT Saplings Naturalist and 2 PT Naturalists would give us the most flexibility. With this help, we could also hold another guided tour every Wednesday @2:30 pm, consistent with weekend walks.

*** One way of managing staff in summer is to link the Jr. Naturalist Program with summer camp so that each Jr. Naturalist gains experience by working approximately 8 camp days, xx no. of weekend/weekday tours, etc. In that manner, we would need about 3 PT naturalists to serve about 180 students each week. Volunteers & Jr. Naturalists would assist each paid camp counselor.

AN EXAMPLE OF HOW STAFFING MIGHT WORK

J F M A M J J A S O N D

Saplings: need at least ← Saplings Naturalist-→ ←-Sap. Naturalist->
2 PT naturalists each season

MS Project: help ← 1 PT Naturalist----------→
From TREC, TreeMendous

Explorer and Family
Packs: big demand in the summer ←---Naturalist----→
Need help with turnover

Summer HS Projects:
Partner w/Sea. Youth ←------Naturalist---------→
Employment Services

1 FT Saplings Naturalist could help with Packs and summer programs
1 PT Naturalist for Middle School and Summer HS projects, employed Jan. – Aug, wouldn't have to retrain with grounds crew for information and procedures.
It is also possible for the FT Saplings naturalist to work from Wed.-Sun., when Saplings season wasn't running. They could monitor weekend walks and weekend family activities. With this shift, there would also be a leader for adult guides who work and can only come on weekends.

A POSSIBLE SCENARIO FOR ACTIVITIES, VISITORS

- Saplings School Programs currently run only from 10-11:30 am M-F. Generally, no more than 60 students in these programs visit at any given time in order to limit impacts to the Arboretum. With additional staff, as many as four groups of 30 could visit at one time.
- Middle School Programs would occur 12:30 – 2:00 pm M-F. 60 students max. , coordinated to not overlap with saplings programs.
- Higher education use by the UW and other Community Colleges is typically 8-5 pm MF during the following M-F during the following seasons: fall, spring, and summer.
- After school programs will typically be Tuesdays and Thursdays 2:30 – 4:00pm during the months of January to late May.
- Explorer and Family pack checkouts are typically M-F from 10 – 4 pm, year around, prescheduled for weekends.
- Adult Tours are also limited to the GVC hours and are typically M-F 10- 4 pm, with some evening events
- Weekend walks are held every Saturday and Sunday at 1 pm except on Holidays, in December or on Husky Stadium football days. (Seahawks & Husky football games are currently hampering tours
- Arboretum Adventures (Sunday @2 pm) and Storyvine (Saturday @ 11am) are held once a month for about 2 hrs on weekends.

- Possible Youth Employment Services and high school students, internships, and community service projects during the school year, as well as other community service projects will probably happen M-F, 8-3:30 pm
- Adult classes are usually week day evenings 7-9:30 pm or Saturdays (8-5 pm)
- Community educational and meeting events occur any day from 7:30 am – 5:30 pm
- Community Social events can occur from 4 pm onward Sun-Sat.